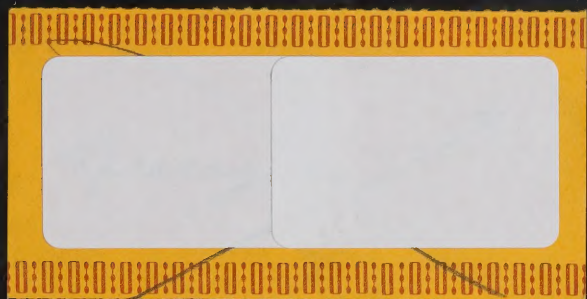


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RESEARCH AND DEVELOPMENT

A BRIEF

TO THE MINISTRY OF STATE FOR SCIENCE AND TECHNOLOGY

In response to

Measures to Strengthen and Encourage
RESEARCH AND DEVELOPMENT IN CANADA (June 1978)



From the

ASSOCIATION OF UNIVERSITIES AND COLLEGES OF CANADA

September 1978

In early June, the Minister of State for Science and Technology announced that the Government of Canada was establishing, as a national priority, a target of 1.5% of the Gross Domestic Product for research and development expenditures by 1983. At the same time, he released for discussion a document that included specific measures planned to stimulate innovation through research. Among those measures was an announced increase of ten million dollars in the budgets of the granting councils for the current year, for the support of university research in areas of national concern.

In a statement by its President, Dr. M.O. Morgan, the Association of Universities and Colleges of Canada applauded the government's initiative to stimulate research in Canada and particularly to provide additional support for university-based research activities. Although the Association believes this endeavour to be overdue, it supports the government's action to encourage scientific activity and strengthen the declining university research capability.

Anxious to respond to national concerns and interests, the universities appreciate the renewed support for their efforts. Nevertheless, it must be stated again that an important national concern is the maintenance and strengthening of the universities' ability and capacity for basic research. The universities remain the primary resource in Canada for basic research and they cannot be adequately supported if all new funds are to be tied to mission-oriented research, even under ideal cooperative relations among government, industry and universities.

Basic research provides an essential foundation for social advancement and technological innovation. In addition, graduate teaching and research are inextricably related, the graduate student being an apprentice researcher who learns the qualities of objectivity, critical insight and imagination indispensable to the solution of problems. The fundamental reason for university involvement in research is the enhancement of the teaching by faculty members who are themselves working at the forefront of knowledge.

None of the functions of the modern university can be enriched if immediate, short-term goals of national interest become the preponderant motive for the research activities of these institutions. Indeed, university-based research requires that first-rate individuals be free to follow their interest and intuition, a freedom that the university is in the best position to provide. As a result, the primary potential of university research for society must be regarded as a long-term capability through the creation of knowledge and the training of future generations of researchers.

It is a fact that, in today's society, many researchers have a strong interest in relating their activities to areas of national interest. Canadian universities have responded by supporting to an increasing extent mission-oriented research projects.

In recent years, the universities have also increased their activities in mission-oriented contract research designed to satisfy industrial requirements and to resolve immediate problems in selected

areas. A new mechanism for those contributions has been the Strategic Grants Programme which will now be provided with increased funding. Additionally, the government has developed the Scientific and Technical Employment Programme (STEP) and Scientific and Technical Employment Programme Extension (STEPEX) to encourage companies with limited technical facilities to contract out suitable projects to universities or to contract research organizations in order to create more job opportunities in science and technology.

Canadian universities, in contributing to mission-oriented research through contracts with the Department of Supply and Services, have demonstrated unique research capabilities. It is regrettable that they can only be involved on a basis secondary to the industrial sector under the federal government's "contracting-out" policy which gives preference to industry. So that society may derive more benefit from university-based capabilities, the Association recommends that a separate university "contracting-out" policy be developed.

The universities are anxious that funding programs be developed to ensure an appropriate blend of curiosity and mission-oriented research which will permit them to play their research role most effectively. This amalgam can only be achieved if some of the concerns identified in the discussion paper are resolved: the low ranking of Canada, compared to other industrialized countries, in research and development; the imbalance in funds provided to government, industry and university for research and development; the role of university research in the total Canadian scientific effort.

Although the Association's interests are primarily in the university sector, the AUCC recognizes that its member universities are a part of a greater unit. The Association and the universities are pleased at the initiative of MOSST in relating the interests of the various research sectors. The AUCC supports the government's plans to establish five industrial research and innovation centres as well as centres of excellence. These centres will provide a constructive link among universities, industry and government, and will promote cooperation among the three sectors in ways that will encourage the effective transfer of technology and innovation.

The AUCC has undertaken a study on the establishment of "centres of concentration" at Canadian universities. The study group is concerned with defining the appropriate role of these centres, the ways in which they might be funded and how they might make an effective contribution to the needs of our society. It is likely that MOSST's centres of excellence and at least one category of the study group's proposed centres of concentration are very similar concepts.

We agree with the MOSST discussion paper that most research positions in future years will be in the industrial and business sectors. We cannot, however, support the conclusion that, for graduates to have an industrial orientation, their training should increasingly be in applied research related to areas of national concern. There is ample evidence in Canada, as elsewhere, that experience in basic research provides an excellent background - in many instances the preferred background - for persons assuming research positions in industry.


Basic research training, if of high quality, gives to a student experience that is as applicable to research in the industrial sector as it is to further basic research in the university.

Granting agencies, as well as the Department of Supply and Services, should be encouraged to adapt to the evolving context in which university research is pursued. Rules and procedures should be revised to take into account such developments as faculty collective agreements and the difficulty universities encounter in attracting graduate students in fields for which the job market is most attractive.

Universities will only be able to fulfil their role in the training of research manpower for industry if they themselves have a continuous infusion of young scholars into their faculty ranks. As the Science Council Task-Force has pointed out, a constant supply of new talent will be required to sustain the vitality of investigative teams of researchers.

The AUCC is concerned that this new investment by the government in research and development may be wasted if the existing basic research programmes in universities are allowed to deteriorate further. Operating grants have not kept pace with inflation with the result that a serious decline has already taken place in university research efforts. It is vital to this country's research capability that this erosion be stopped and that concerted efforts be put into preserving the research that is now being done in the universities. A strong basic research base is vital for our future and it must be recognized

that government cannot generate worthwhile results simply by providing new monies for support of new programmes.



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